

# 3 ACCA

THIRD AFRICA CONGRESS ON  
CONSERVATION AGRICULTURE  
5-8 June 2023 | Rabat, Morocco



## Adoption of conservation agriculture in South Africa – accurate assessment data for insights towards a comprehensive support strategy

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Theme:

Building a Resilient Future in Africa  
through Conservation Agriculture and Sustainable  
Mechanization



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# The aim of the study

To gather updated data and evidence on progress pertaining to the adoption of Conservation Agriculture within the annual cropping systems farming communities in South Africa.

## The objectives of the study

1. Conducting a survey to assess the current extent of progress on the adoption of Conservation Agriculture in South Africa.

***Inclusive of:***

- a) database on the spatial footprint (ha and locality) of the extent conservation agriculture within South Africa as well as the applicable principle (s) of adoption
  - b) database of all stakeholders involved in CA in the country inclusive of their role and contribution
2. Analyse the status quo of Conservation Agriculture in the country supported by recommendations on options for improvement.

# Research method

A telephonic survey was used to assess the area (hectares) under CA under annual grain cropping systems in South Africa taking the following steps:

1. Identify the most suitable spatial unit
  - A *Magisterial District* was identified as the most practical and smallest spatial map unit for this purpose
2. Select several *enumerators* to assist with data collection from the key informants in the various Provinces of South Africa
3. Identify local *key informants* for each of the Magisterial Districts or broader regions (comprising several districts) who have a good knowledge of the use (adoption) of different farming systems by farmers in the districts.



# Research method (continue)

4. Conduct a *telephonic survey* (by the enumerators) to collect the CA adoption figures per Magisterial District.

**The CA definition used was:**

*No-till planting (either disc or tine no-till planter)*

*+ crop residues (>30% soil cover)*

*+ at least 2 crops or more in rotation (strip till or any other tillage did not qualify)*

5. Identify *key stakeholders* who play a significant role in the adoption of CA in South Africa, especially those working with farmers.

# Research method (continue)

6. Manage the data collected in the telephonic surveys and aggregate it on a Magisterial District, Provincial and national level.
7. Analyse and discuss the survey results on a Provincial level alluding to significant CA adoption stories, patterns and trends observed on a district level.

Spatial data (hectares under annual crop-livestock systems) provided by GEOTERRAIMAGE was key in the success of this step.

Class 1:	0% adoption
Class 2:	1-5%
Class 3:	5,1-15%
Class 4:	16-25%
Class 5:	26-50%
Class 6:	>50%

8. Make conclusions and strategic recommendations

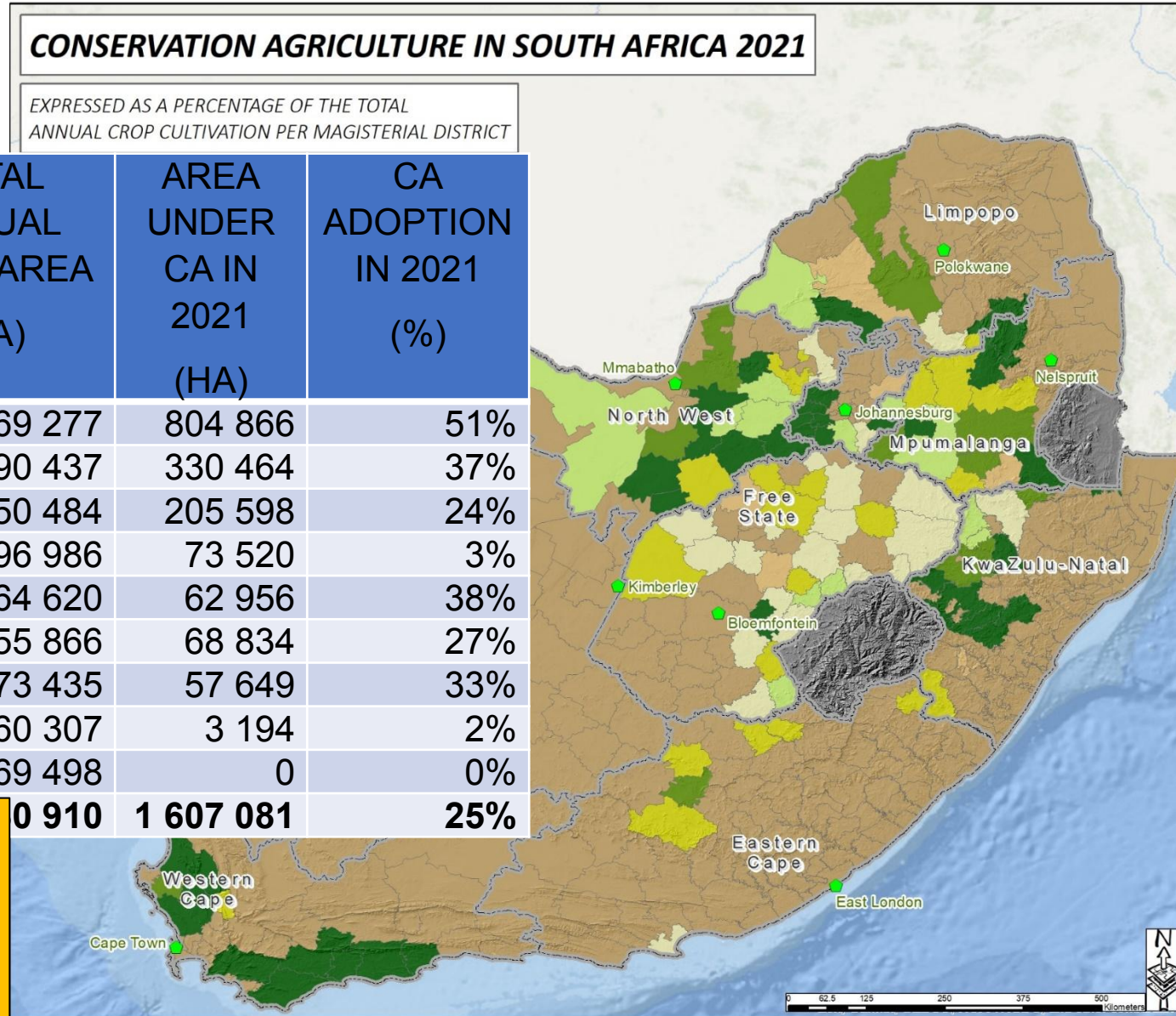
# Results

## CONSERVATION AGRICULTURE IN SOUTH AFRICA 2021

EXPRESSED AS A PERCENTAGE OF THE TOTAL ANNUAL CROP CULTIVATION PER MAGISTERIAL DISTRICT

PROVINCE	TOTAL ANNUAL CROP AREA (HA)	AREA UNDER CA IN 2021 (HA)	CA ADOPTION IN 2021 (%)
Western Cape	1 569 277	804 866	51%
North West	890 437	330 464	37%
Mpumalanga	850 484	205 598	24%
Free State	2 196 986	73 520	3%
KZN	164 620	62 956	38%
Limpopo	255 866	68 834	27%
Gauteng	173 435	57 649	33%
Eastern Cape	160 307	3 194	2%
Northern Cape	69 498	0	0%
<b>TOTAL</b>	<b>0 910</b>	<b>1 607 081</b>	<b>25%</b>

**NOTE:** Commercial farmers in summer rainfall area adopted CA without any formal research & extension support.



### Legend

- Main\_Towns
- RSA\_Provinces
- % CA per Magisterial District**
- 0% CA
- 0.1 - 0.9% CA
- 1 - 5% CA
- 5.1 - 15% CA
- 15.1 - 25% CA
- 25.1 - 50% CA
- >50% CA

# What factors played a role in CA adoption in South Africa?

- Local pioneer CA farmers
- Local farmer groups & research teams working with them
- Local CA equipment manufacturers ('selling the CA system' with equipment)
- International success stories and cross-visits (e.g., to and from Argentina, Australia),
- International pioneer CA farmers (and *youtube!*) (e.g., Gabe Brown)
- International CA scientist (and *youtube!*) (e.g., Elain Ingham, Ray Archuleta, Allan Savory, Jonathan Lundgren),
- Local CA scientist,
- Local service providers and agribusiness (e.g., seed companies).
- Local awareness and information through farmers days, conferences, webinars, popular agricultural magazines and TV channels



# The following underlying problems were seen as the main factors leading to low CA adoption rates in certain areas and Provinces

- Lack of awareness, knowledge and understanding of environmental problems, such as soil erosion, loss of biodiversity and climate change.
- Lack of knowledge and understanding of the nature and function of natural resources (ecology), especially soils.
- Ignorance of appropriate solutions to address these issues (e.g. CA principles and practices).
- Unique and challenging environmental conditions, specifically a combination of sandy soils and a semi-arid climate in the western summer rainfall cropping areas.
- Lack of appropriate CA equipment, such as no-till planters and sprayers. Smallholder farmers are also constrained by the unavailability of tractors and the lack of training on calibration of CA no-till implement.
- Resistance or inaction by individuals and institutions in various spheres of the agricultural sector, such as organized agriculture, agri-business, academics, researchers and farmers
- Financial institutions still financing conventional practices – banks, insurance, etc.
- No effective financial incentives and investments
- A lack of appropriate research and extension support due to diminishing capacity and poor training at tertiary level.
- Inappropriate research and development (R&D) approaches. Most researchers and extension officers still follow linear R&D approaches with a low effectiveness and poor impact on farmer level.

# Recommendations

- **The existing CA farmer-led structures** (e.g., clubs and groups) created by farmers and other stakeholders (e.g., LandCare, CA FIP, etc.) that successfully spread the adoption of CA in the various regions in South Africa as assessed in this study, **should be supported and used as ideal platforms** to implement, strengthen and scale out/up CA initiatives to other farmers, stakeholders and regions.
- **CA farmer pioneers and innovators**, together with their structures, played a key role in the adoption and spread of CA in South Africa. These individuals and institutions **should be acknowledged, rewarded and used as key innovators and champions in their own right**. One way to achieve this outcome, is by putting farmers in the center of (new) CA initiatives, following a full participatory systems approach as a minimum requirement.
- **Smallholder and (new / emerging / new era) semi-commercial farmers** face various unique challenges and generally a severe lack of resources to carry out their farming. What was observed in this context, is that the introduction of CA into their farming system **requires the design, introduction, and facilitation of a reasonably complex innovation process that have system-wide implications**, such as specialised knowledge and skills of the implementers. Where this approach was followed for at least 4 or 5 years, a reasonably high adoption rate, self-sustained by around 20% of them occurs. Without this approach a very low adoption rate occurs and almost nobody will be able to self-sustain their CA system without continuous support through technical assistance, production inputs and implements.

# Acknowledgements

The following institutions, individuals and groups are acknowledged for their contributions and support in this study:

- The Norwegian Agency for Development Cooperation (NORAD) and the FAO for funding.
- The National Conservation Agriculture Task Force of South Africa.
- Department of Agriculture, Land Reform and Rural Development (DALRRD) Land and Soil Management directorate and LandCare Programme of South Africa.
- The National level enumerators who assisted with data collection.
- The local key informants in each of the Magisterial Districts for the provision of CA adoption data among producers.
- GEOTERRAIMAGE for the provision of data on cropping areas (area (ha) and crop type) under annual crop-livestock systems.

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